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(54) Title: METHOD AND SYSTEM FOR COMMUNICATING VISUAL INFORMATION
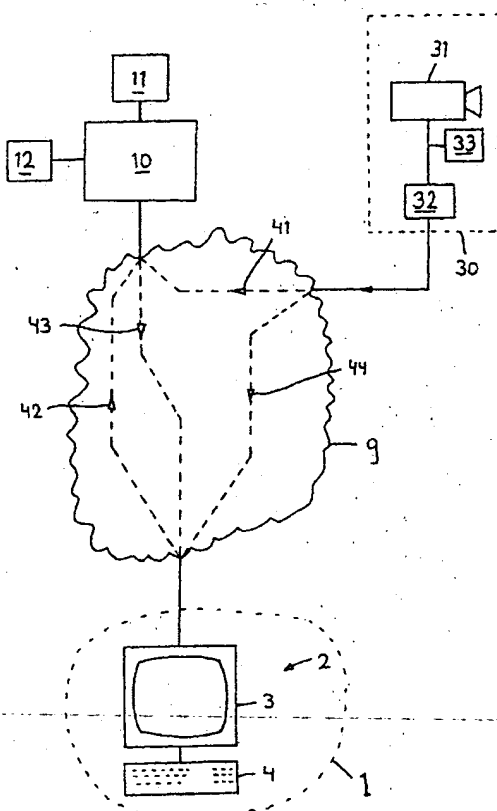
(57) Abstract: A method and system for allowing customers to obtain images from a remote location are described. The system comprises an Internet site (10) and remote cameras (31) connected to the Internet through an interface (32). With the Internet site (10), a memory (11) is associated, in which information regarding the customers and their access permission is stored. When a user wants to see a certain remote location, he contacts the site (10) and enters his particulars. His particulars are compared with the information in the memory (11) to check whether this user is authorised to see this specific location. If so, images from the specific remote camera (31) associated with this remote location is relayed through the Internet to the user, by the Internet site (10).

Title: Method and system for communicating
          visual information

        The present invention relates in general to a system which
allows a viewer to view a remote location, in real time.
        Such systems are known in the implementation of a
dedicated system, where one user is able to view one specific
5   location through the use of one specific camera which is linked
to a monitor at the viewer's location by means of a suitable
information transfer system, for instance a conductive cable,
optical cable, or a wireless communication system. Obviously,
such system has limitations, in that the viewer can only view
10   the scene observed by the specific camera from one specific
location, i.e. where the monitor is located. Further, it is
disadvantageous that a dedicated system needs to be set up for
each combination of location to be watched (camera) and
location where the viewer can watch (monitor).
15   An object of the present invention is to provide a system
which allows the images generated by a specific camera to be
seen by any number of authorized viewers, independent from the
location where those viewers are located. Further, the present
invention aims to achieve this objective with a minimum of
20   system costs.
        Further, the present invention aims to provide a system
which is flexible in design, in that the locations which can be
viewed as well as the persons who are authorized to view these
locations can easily be amended.
25   According to an important aspect of the present invention,
use is made of a computer network, preferably but not
exclusively the Internet. Connection between a user and camera
is made through one specific Internet site. A user who wants to
view a specific scene, enters the scene of his choice, his
30   name, and his personal password or other suitable
identification number. The Internet site determines whether
this specific user is authorized to view the scene of his
request, and if so, the connection to a specific camera is

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made. The connection is a one way connection allowing the user
to view in real time specific scenes on his computer or other
type of viewing apparatus, for instance a telephone with
Internet facilities and suitable display.

5   Normally, the connection is for images only, but the
connection may be for sound, too.

        The invention offers great flexibility in respect of the
viewers. Any interested viewer needs only to have an Internet
surfing apparatus, normally but not exclusively a personal

10   computer. The interested viewer needs only to remember one
address of one Internet site, independent of the location he
wishes to see. The interested viewer needs only to contact this
Internet site, and enter his demand. Of course, the system may
comprise cameras which are freely accessible to anyone, but

15   normally access to a camera is restricted to a certain number
of authorised persons; therefore, the interested viewer needs
to enter his name and authorisation code. This information is
also used for billing the viewer.

        The invention also offers great flexibility in respect of

20   the places which can be monitored. Whenever a new location
joins the system, all that is needed for the company operating
the system is to install a new camera with an Internet
interface. Then, through the Internet, communication with this
camera is possible from anywhere in the world, always through

25   said one Internet site and under the exclusive control thereof.

        These and other aspects, characteristics and advantages of
the present invention will be further clarified by the
following description of a preferred embodiment of a control

30   circuitry in accordance with the invention, with reference to
the drawings, in which same reference numerals indicate equal
or similar parts, and in which the figures schematically
illustrate a computer network.

35   In the figures, a computer network is generally indicated
by the reference numeral 9. This computer network 9 is for
instance the Internet, although the applicability of the
present invention is not limited to the Internet. As is
commonly known to persons skilled in the art, the Internet

comprises many Internet sites, each having a unique address,
which can be visited by simply typing the desired address in a
suitable browser. In fact, such site is implemented by a
computer, which can send information through the Internet to a
5   visiting computer. Usually, such information comprises web
pages. In the figures, a host computer 10 is shown connected to
the Internet, which host computer 10 is responsible for
generating an Internet site according to the present invention,
indicated with the expression "host site". In the following
10   discussion, however, for the sake of simplicity, no distinction
will be made between the concept of Internet sites on the one
hand and the physical implementation by means of a computer on
the other hand.

     The figures also show a user, generally indicated as
15   visitor 1, with a web surfing device which, in the example
shown, comprises a personal computer 2 including a monitor 3
and a keyboard 4. However, the present invention is not limited
to the use of a PC as web surfing device; instead, the present
invention is applicable in the context of any type of web
20   surfing device, such as for instance a mobile telephone with
web surfing facilities, a TV-set with a web surfing appliance,
a personal digital assistant (PDA), etc. The only condition is
that the web surfing device comprises a monitor 3 or can at
least be coupled to an associated monitor 3 for displaying
25   images.

     The system further comprises at least one, but preferably
a large number of, remote stations 30, each remote station 30
comprising a remote camera 31 connected to the Internet 9
through an associated web connecting device or web interface
30   32, typically a computer. This web interface 32 is designed to
catch the image signals from the associated remote camera 31,
and to send (41) these signals through the Internet 9 to the
host site 10 in a suitable format. Since such web interfaces
are known per se, a more detailed description thereof is not
35   necessary here.

     If a person wants to subscribe to the visual connection
services of said host site 10, he must first register with the
company which operates the host site 10. An operator of this
company will determine which cameras are accessible to this

subscriber, and will issue an authorisation code to the
subscriber. This information is also entered into an
authorisation table in a memory 11 associated with the host
site 10.

5   Whenever the visitor 1 wants to be connected to a specific
remote camera 31, he visits (42) the host site 10, where he
will be asked to input information regarding, on the one hand,
the remote location 30 he wants to view and, on the other hand,
regarding his identity and a password or other identification
10   number. The host computer 10 verifies the information as
received in an authorisation table, to check whether this
visitor is authorized to receive images from said specific
remote camera 31. If so, the host site 10 relays (43) the image
signals as received from the remote camera 31 to the computer 2
15   of the visitor 1, through the Internet. Thus, the host site 10
may perform a switchboard function. Alternatively, the host
site 10 may instruct the web interface 32 associated with the
specific remote camera 31 to send (44) the image signals
directly to the visitor 1, at least during a predetermined
20   time.

        The communication from host site to visitor will be
performed by way of web pages, generated by the host site and
displayed on the viewer's monitor 3. In these web pages, the
host site may present information to the visitor, and the host
25   site may ask its questions to the visitor in written form, or
by way of fill-in boxes, etc. In order to allow a visitor to
re-visit a previously visited camera in a more easy way, the
host site 10 may comprise a further memory 12, in which the
host site 10 will store the identity of the last N cameras for
30   each visitor, the number N for instance being equal to 10. When
such visitor re-visits the host site 10, the host site may
present the visitor a list of recent visits, and the visitor
may re-visit a certain camera by clicking or doubleclicking on
an item in the list. In case access to such camera depends on
35   autorisation, the host site will ask the visitor to enter his
particulars.

        An important advantage of the present invention is that
visitors, whether they are authorized or not, can not access a

remote camera 31 directly. On the other hand, even if one would
accidentally find the Internet address of any remote camera 31,
the web interface 32 associated with that camera 31 would not
send image signals to such accidental visitor, because the web
5   interface 32 is designed to send such signals to the host site
10 only, or to send such signals to specified computers only in
response to instructions received from the host site 10. Thus,
a visitor 1 can only receive image information from a specific
remote camera 31 if authorized by the host site 10. This
10   authorisation will be given by the host site 10 only if certain
conditions are met, depending on the circumstances. These
aspects assure that privacy will be respected.

Further, an important advantage of the system according to
the present invention is that a large number of remote cameras
15   31 can be accessed through only one Internet site. Users need
only to remember the name of one specific Internet site,
advantageously called, for instance, VisualConnect.

Possible applications of the present invention will now be
20   discussed.

In a first application, one or more cameras 31 are
installed to monitor a specific location associated with only
one user, for instance his home, his office building, a parking
place for his car, etc. From any location in the world, the
25   user can check whether his house, office, car, etc.,
respectively, is alright, by connecting to the host site 10 and
entering the desired destination and his password.
Specifically, cameras may be installed in children's bedrooms;
even if one is away from home, one may check whether the
30   children are alright.

In cases like these, where in principle only one user has
access to one specific camera, the user may receive his access
code or authorisation code on installation of the camera.

35   Another typical example, where multiple people are
potentially allowed to receive the images from a specific
camera, is a location where many children are together without
their parents usually being present. An example of such
situation is a school classroom, a daycare center, etc.

Although the parents may have to leave their children to the
care of other people, such as a teacher, a daycare center
attendant, etc., and although they normally have full
.confidence in the capabilities of such other people, parents
5 feel the need to check upon their children themselves now and
- then. Such facility is offered by the present invention, too.

       If for instance a daycare center wishes to offer this
facility to the parents, one or more cameras 31 are installed
in such daycare center. Parents receive an authorisation code
10 upon registration of their child to such daycare center. If
these parents feel the need to watch their children, they visit
the host site 10 according to the present invention, enter
their name and authorisation code, and the images of the
daycare center in question are relayed to them.

15   In such a situation, the authorisation of the parents may
be restricted to the moments that their children are actually
present in the daycare center.

       It will be clear to a person skilled in the art that
images of the playing children cannot be relayed to
20 unauthorized persons, simply because these persons do not have
the correct authorisation code.

       Another typical example regards events which can only be
visited by a limited number of people. Examples of such events
25 are, for instance, sporting events, musical events, etc. If the
tickets are sold out, a large number of potential visitors who
would in principle be willing to pay for such visit must be
disappointed if they can not visit. Also, potentially
interested people may be unable to attend because they are
30 living far away from such event, or for any other reason.
However, in accordance with the invention, cameras may be
installed at such events, and visitors from all over the world
may watch such event in real time, on payment. Thus, not only
do those visitors benefit, but also the organisers of such
35 event may be able to make more money than by selling tickets to
a limited number of visitors.

       Another typical example regards the processing of a
certain personal item along a process line, for instance a

certain product being manufactured on demand for a certain
customer. By installing cameras along the process line in
accordance with the present invention, such customers may be
offered the facility of watching their personal product being
5 processed. Herein, the authorisation code may be issued when
the processing of the product is ordered; this information will
also be used to connect the customer to the correct camera
along the process line, i.e. the camera which momentarily
corresponds to the specific product associated with this
10 specific customer.

Another typical example regards the cameras which are
installed near motorways in order to monitor the traffic. In
principle, these cameras are intended for traffic police, only.
15 However, it is feasible that the images are made available to
the public, for instance to allow a driver, before leaving, to
check upon the traffic intensity. It may be that the operator
of the host site 10 decides to make these images available to
everybody free of charge. However, it is also possible that the
20 operator of the host site 10 decides that access is only open
for subscribers at a certain fee.
        Of course, it is also possible that cameras are installed
for showing scenery to remote tourists, for touristical PR
purposes.
25

Another typical example regards cameras which are employed
on exploring vehicles such as satellites. It may be that the
images provided by these cameras are for internal, scientific
use only. The present invention, however, provides a way of
30 making these images available to the public, possibly on a
commercial basis.

It is, of course, possible that the host site 10 will show
a visitor all possible connections on one page. However, it is
35 preferred that the host site organises the connection
possibilities into groups, for instance: "guarding premises";
"schools"; "daycare centers"; "events"; "processes"; "scenery",
etc. Then, the host site 10 may present a list of such groups,
and the visitor will enter a next web page by choosing a

certain group, i.e. by clicking on a certain item in the list. Further sub-division into further sub-groups, and clicking to further web-pages will be possible.

It may be possible that the host site 10 only asks the
5 visitor for an authorisation code if he has selected a camera with restricted access. However, it may also be possible that the visitor is asked to enter his authorisation code first, and that, in the above-indicated web-pages, options will only be presented to him if such options are accessible with his
10 specific authorisation code (or without needing a code). It may even be possible that the visitor is asked to enter his authorisation code first, and that the host site will understand that the authorisation code corresponds to only one camera and will make the connection automatically.
15

In the above, it has been described that the visitor can watch the images provided by a selected camera in real time. However, it may also be that a visitor wishes to view a certain event after it has happened. For instance, the visitor may wish
20 to re-view an event a second time, or a plurality of times. It may also be that a visitor wishes to view an event which he was unable to view in real time. In order to provide such facility, cameras 31 may be equipped with a memory 33 in which images (footage) can be recorded and kept for a predetermined time,
25 preferably at least a number of days. If the host site receives a request from a visitor to view a recorded event, the host site will instruct the remote location 30 to send these recorded images over the network 9.

30 Billing for the facilities offered by the present invention may be done in several ways. For instance, it is possible that the user pays a fixed amount of contribution to the host site 10, for having the facility available, whether or not the facility is used at all. This type of billing scheme
35 may be adequate in cases where there exists a one-to-one relationship between a visitor and a camera, for instance in the above-described example of cameras guarding the premises of a user.

In other examples, the user may be billed for each image connection set up on his request through the host site 10, or for the amount of time such connection lasts. In both cases, billing may be combined with a fixed amount of subscription.

5

In the above, the invention is explained for a configuration where each camera is directly connected to the network 9, and where the designation of a certain camera based on a visitor's request is fully made by the host site 10. As an
10   alternative, it is also possible that a plurality of cameras 31_1, 31_2, 31_3, etc. is accessible through a group site 50, as illustrated in figure 2. Such a configuration will apply in cases where the actual designation of a specific camera is done by an operator (group site 50) of the group of cameras,
15   depending on local circumstances. Then, the host site will connect to the group site 50, which will connect to a specific camera 31.

Then, individual interfaces 32 may be associated with the individual cameras 31 of the group, each individual interface
20   32 being connected between the corresponding camera 31 and the group site 50. However, it is also possible that a common interface 32 is connected between the group site 50 and the network 9.

An example of a situation where such configuration might
25   be advantageous is a children daycare center where the children may be present in different rooms; then, the group site 50 may act as a kind of switchboard and connect the visitor to the specific camera located in the specific room in which the child of this specific visitor is momentarily present.

30   Another example regards processing a product along a process line. The group site 50 associated with the process line will know where the specific product belonging to the specific customer is located, and will know which camera to activate.

35   Similarly as described above, each camera 31_1, 31_2, 31_3, etc. of such group may be equipped with an associated memory 33_1, 33_2, 33_3, etc., respectively.

In the above, it is explained how the visitor can connect
to a camera in accordance with the present invention. It is,
however, emphasized that the present invention is not
restricted to a visitor making contact with one camera only.
5   Instead, it is also possible that the visitor connects to two
or more cameras simultaneously, either in one request or in a
number of subsequent requests. Each time the visitor makes a
next request, the host site can ask the visitor whether he
wants to continue his previous connection or whether he wants
10 to disconnect.

Then, when the visitor is connected to two or more cameras
simultaneously, which means that the images from two or more
cameras are received by his web surfing device simultaneously,
he has the option to watch the images of only one camera on his
15 monitor 3, and to switch between cameras as desired. However,
he also has the option of watching the images from two or more
cameras on one monitor, at the same time. To this end, the
visitor may use known per se techniques such as split screen or
multiple screen, wherein certain areas of his monitor screen
20 are defined and reserved for projecting the image of one
camera. These areas may be ordered as desired, for instance
above each other, next to each other, partly behind each other,
etc. The areas may be any desired shape, for instance
rectangular, circular, etc. The areas may be of different size.
25 Further, the form and size may be amended at any time, as
desired.

Thus, the present invention offers the user the
possibility of watching a plurality of scenes at the same time,
which is for instance advantageous in the case of a user who
30 has two or more children staying in a daycare center, and who
wants to see his children simultaneously.

Still further, the invention offers the user the
possibility of receiving images from cameras. However, the
35 invention does not require the user to dedicate his complete
web surfing device to watching camera images. For instance, if
the user uses a personal computer 2, he may run any computer
programme such as for instance a text processing programme, and
have one or more areas of his screen reserved for watching

images from one or more cameras. In the exemplary case where
the user sees his children play at a daycare center, such areas
may be considered as constituting a moving picture.

5   Thus, the present invention succeeds in providing a method
and system for allowing customers to obtain images from a
remote location. The system comprises an Internet site 10 and
remote cameras 31 connected to the Internet through an
interface 32. With the Internet site 10, a memory 11 is
10   associated, in which information regarding the customers and
their access permission is stored. When a user wants to see a
certain remote location, he contacts the site 10 and enters his
particulars. His particulars are compared with the information
in the memory 11 to check whether this user is authorised to
15   see this specific location. If so, images from the specific
remote camera 31 associated with this remote location is
relayed through the Internet to the user, by the Internet site
10.

20   It should be clear to a person skilled in the art that the
scope of the present invention is not limited to the examples
discussed in the above, but that several amendments and
modifications are possible without departing from the scope of
the invention as defined in the appending claims. Especially,
25   other applications of the present invention are feasible.

12

CLAIMS

1.   Visual connection system, comprising:

a computer network (9), preferably the Internet;

a site (10) on said network (9);

at least one remote station (30), comprising a remote camera

5   (31) connected to said network (9) through an interface (32);

a memory (11) associated with said site (10), containing user
authorisation information;

wherein the interface (32) is designed to send (41) image
signals generated by the associated camera (31) to said site

10   (10) through said network (9);

wherein the site (10) is designed to receive requests (42) from
users (1) through said network (9), the request comprising
destiny information relating to a specific camera (31) and
authorisation information relating to the user;

15   wherein the site (10) is designed to compare the information in
the user request with the information in said memory (11) and
to decide whether the requesting user (1) is authorised to
receive image signals from said specific camera (31);

and wherein the site (10) is designed to relay (43) the image

20   signals from said specific camera (31) to said requesting user
(1) through said network (9) if it is decided that said
requesting user (1) is so authorised.

2.   System according to claim 1, wherein the site (10) is

25   designed to, instead of relaying the image signals, instruct
said specific camera (31) to communicate (44) the image signals
directly to said requesting user (1) through said network (9),
in real time.

30   3.   System according to claim 1 or 2, wherein the site (10) is
associated with a memory (12) for storing information regarding
recent visits of the visitors.

4.   System according to claim 1 or 2, wherein at least one

35   camera (31) is associated with a memory (33) for storing
footage.

13

5. System according to claim 4, wherein the remote station (30) is designed to, on request, send image signals from said associated memory (33) to said site (10) or to the requesting visitor, respectively.

6. System according to claim 1 or 2, wherein a plurality of cameras (31_1; 31_2; 31_3; …) are connected to said network (9) through a group site (50).

7. System according to claim 6, wherein the group site (50) is designed to, on request, send image signals from at least one of the associated cameras (31_1; 31_2; 31_3; …) to said site (10) or to the requesting visitor, respectively.

8. System according to claim 6, wherein at least one camera and preferably all cameras of said plurality of cameras (31_1; 31_2; 31_3; …) are provided with an associated memory (33_1; 33_2; 33_3; …) for storing footage.

9. System according to claim 8, wherein the group site (50) is designed to, on request, send image signals from at least one of the associated memories (33_1; 33_2; 33_3; …) to said site (10) or to the requesting visitor, respectively.

10. System according to any of the previous claims, wherein the site (10) is designed to receive a plurality of requests (42) from a user, corresponding to a plurality of cameras, and wherein the site (10) is designed to relay (43) the image signals from said plurality of cameras to said requesting user simultaneously or, alternatively, to instruct each of said cameras to communicate their image signals directly to said requesting user.

11. Method for setting up a one-way communication connection between a user (1) and a remote camera (31);
wherein the remote camera (31) is connected to a network (9), preferably the Internet, through an interface (32);
wherein the interface (32) sends (41) image signals generated

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by the associated camera (31) to a control means (10) through
said network (9);
wherein the user (1) sends (42) a request through said network
(9) to said control means (10), the request comprising destiny
5   information relating to a specific camera (31) and
authorisation information relating to the user;
wherein the information in the user request is compared with
information in a memory (11), and wherein is determined whether
the requesting user (1) is authorised to receive image signals
10   from said specific camera (31);
and wherein the image signals from said specific camera (31)
are relayed (43) to said requesting user (1) through said
network (9) if it is decided that said requesting user (1) is
so authorised.
15

12.   Method according to claim 11, wherein the image signals
from said specific camera (31) are sent (44) directly to said
requesting user (1) through said network (9) if it is decided
that said requesting user (1) is so authorised.
20

13.   Method according to claim 11 or 12, wherein the control
means (10) shows the user (1) a list containing a number (N) of
previous visits, and wherein the user makes his request by
selecting one item from the list, for instance by clicking or
25   double-clicking on said item.

14.   Method according to claim 13, wherein the required site is
opened immediately after the user has made his request by
selecting one item from the list.
30

15.   Method according to claim 13, wherein, after the user has
made his request by selecting one item from the list, the user
is first asked to input his authorisation code, and the
required site is opened immediately after verification shows
35   that the authorisation code is valid.

16.   Method according to claim 13,
wherein the user is first asked to input his authorisation
code;

wherein, after verification shows that the authorisation code
is valid, the control means (10) shows the user (1) a list
containing a number (N) of previous visits for which his
authorisation code is valid;

5   wherein the user makes his request by selecting one item from
the list, for instance by clicking or double-clicking on said
item;
and wherein the required site is opened immediately after the
user has made his request by selecting one item from the list.

10

17. Method according to claim 11 or 12, wherein the image
signals from a specific camera (31) are stored in a memory
(33);
wherein the user (1) requests to watch past events;

15   and wherein the signals are read from said memory (33) and sent
to said user (1).

18. Method according to claim 11 or 12, wherein the host site
(10), in response to a user request, connects the user with a

20   group site (50) associated with a plurality of cameras (31_1,
31_2, 31_3, …), and wherein the group site (50) connects the user
with a specific one of said associated cameras.

19. Method according to claim 11 or 12, wherein the host site

25   (10), in response to a user request, connects the user with a
group site (50) associated with a plurality of cameras (31_1,
31_2, 31_3) equipped with associated memories (33_1, 33_2, 33_3);
wherein the image signals from a specific camera (31_1, 31_2,
31_3) are stored in the corresponding memory (33_1, 33_2, 33_3);

30   wherein the user (1) requests to watch past events;
wherein the group site (50) connects the user with a specific
one of said memories (33_1, 33_2, 33_3);
and wherein the signals are read from said specific one of said
memories (33_1, 33_2, 33_3) and sent to said user (1).

35

20. Method according to claim 11 or 12, wherein the user sends
a plurality of requests, corresponding to a plurality of
cameras, and wherein the image signals from said plurality of

cameras are relayed (43) or sent (44) directly to said
requesting user simultaneously.

21. Method according to claim 20, wherein image signals from a
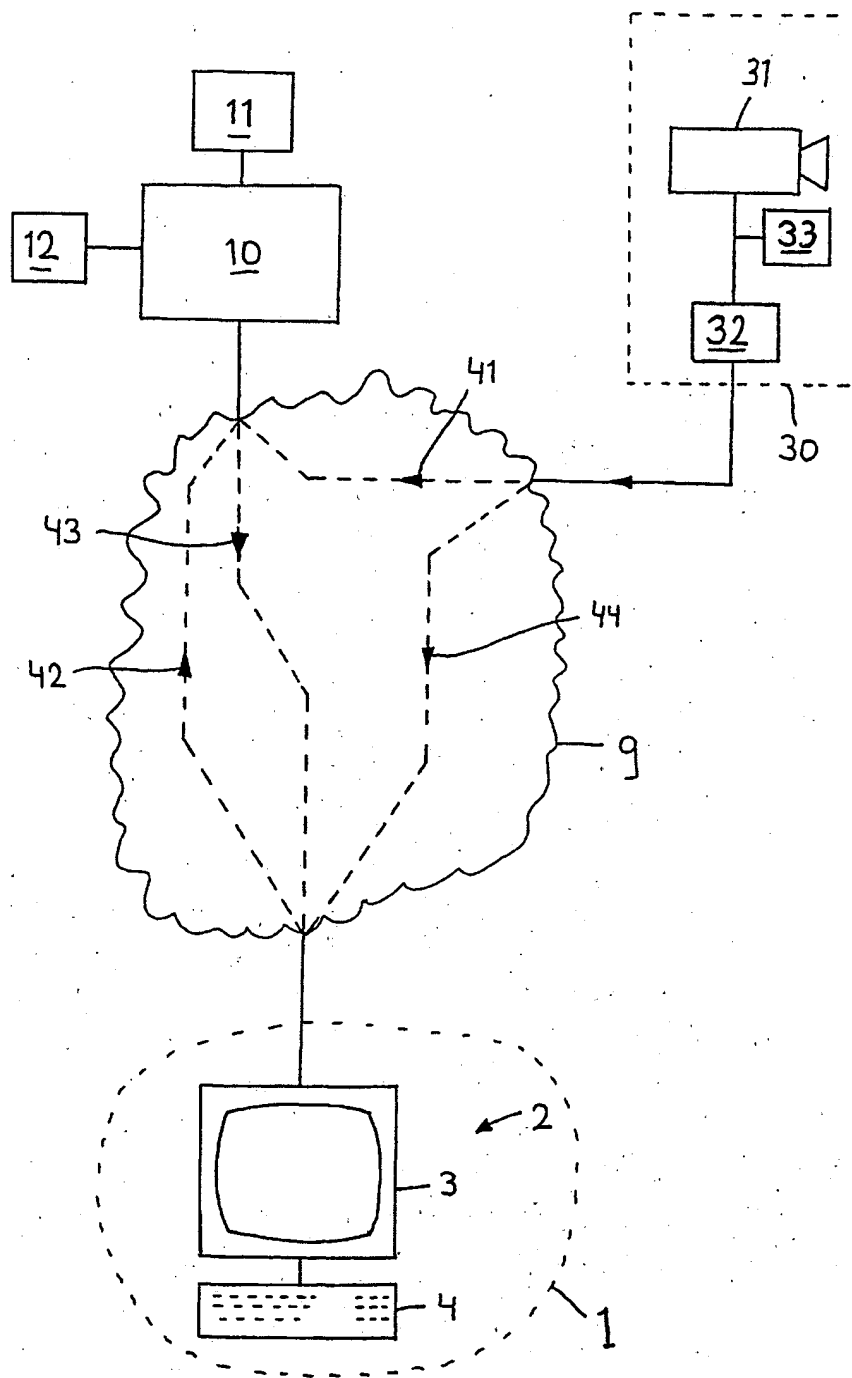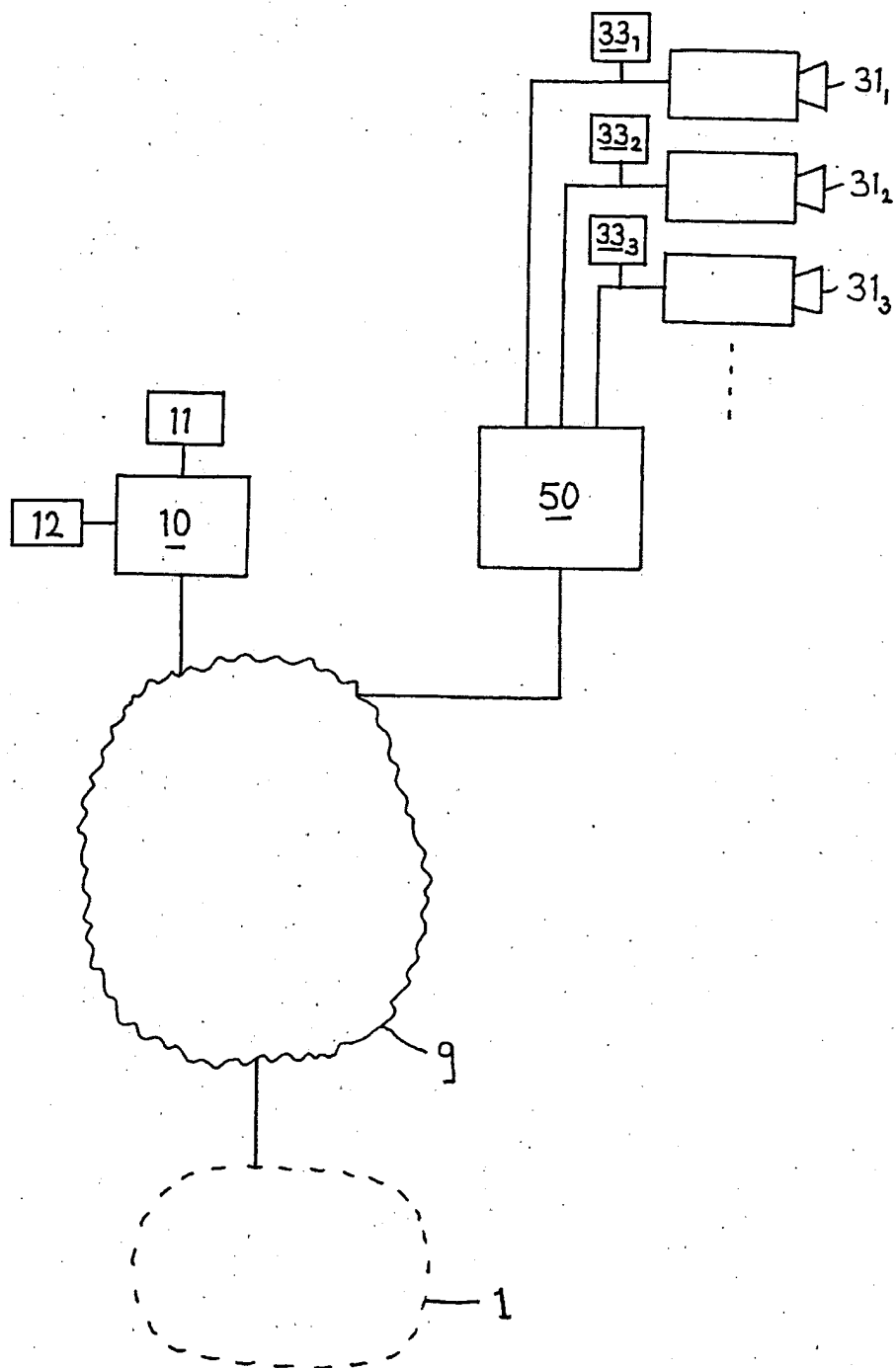plurality of cameras are projected on a screen simultaneously.

FIG. 1

FIG. 2

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7   H04L29/06   H04N7/18   H04L12/28   G09G5/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7   H04L   H04N   H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 09 233453 A (CANON INC) 5 September 1997 (1997-09-05)	1,3-11, 18
X	-& US 6 208 379 B1 (KAWAI TOMOAKI ET AL) 27 March 2001 (2001-03-27) the whole document	1,3-11, 18
Y		17,19-21
A		13-16

X	WO 00 36807 A (CYBERSIGNS INC) 22 June 2000 (2000-06-22) page 2, line 10 -page 11, line 6	1,11

X	WO 00 36812 A (LINDQUIST CHARLES CAMERON ;PORTUS PTY LIMITED (AU)) 22 June 2000 (2000-06-22) page 8, line 8 -page 10, line 18	1,2,11, 12

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[X] Further documents are listed in the continuation of box C.   [X] Patent family members are listed in annex.

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'Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

'&' document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
5 September 2001	24/09/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Kalabic, F

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INTERNATIONAL SEARCH REPORT

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
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Y	WO 97 41513 A (HALLING DALE B ;LEEKE STEVEN D (US); MOTOROLA INC (US); REBER WILL) 6 November 1997 (1997-11-06) page 4, line 2 -page 5, line 4	17,19

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